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Attitude and Beliefs of Population in Utility of Spectacles and Contact Lens WRT Satisfaction and Compliance

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ABSTRACT

Background: Refractive errors are the commonest cause of visual impairment worldwide. They can be easily corrected by various modalities available in the market like Spectacles, Contact lenses, refractive surgeries like LASIK, PRK etc. The purpose of this study is to compare and know the attitude and satisfaction of population to the use of Eye glasses and Contact lens in a questionnaire-based study.

Aim: To compare and study the compliance and satisfaction in the use of Eye glasses and Contact lens in general population.

Objectives: This study is designed to determine the level of awareness and attitude towards modalities of refractive error correction in a random set of population.

To find attributes which influence acceptance and compliance of the population with respect to eye glasses/ contact lenses.

To identify the preference between both the modalities and establishing reasons for compliance of the same.

Materials and methods: A computerized self-administered questionnaire would be circulated amongst the consenting individuals. It would be a structured questionnaire with both open and closed ended questions which will be designed to gather the participant's demographic data as well as their awareness and attitude towards refractive correction methods (spectacle, contact lenses etc.)

The data collected would be analysed using various statistical tests to have an accurate conclusion and would later be depicted through graphical figures and tabulations.

Results: The findings of this study would play a key role in knowing the attributes and the behavioural intention in preferring a particular refractive error corrective method and in turn help contribute to the existing literatures.

Conclusion: The study would affect and reflect on the behavioural intention and decision making process of the people on usage of both versions at a generalized level as per their personal preferences.

Key words: Eye glasses, Contact lens, Satisfaction, Refractive error correction, Compliance

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INTRODUCTION

Refractive error refers to the failure of the eye to focus the image sharply on the retina causing blurred vision [1]. The most common symptoms include blurred vision, Haziness, headaches eye strains etc. It is a prevalent ocular condition that causes public health issues because it affects people of all ages. Refractive error includes myopia hypermetropia astigmatism and presbyopia. If left unchecked, eyesight loss has a major socioeconomic impact [2]. Erratic emotional development, poor performance academically, higher unemployment rates and implications on health related quality of life are some of its negative repercussions. Between 1996 and 2010, the global prevalence of myopia was 26.5 %, hyperopia was 30.6 %, and astigmatism was 14.9 %, according to a study on refractive defects [3]. Ungoverned

refractive errors are one of the foremost causes of visual impairment and blindness globally. Uncorrected refractive error is estimated to affect 153 million people worldwide, with far vision worse than 20/60 [4]. Myopia is a common cause of vision loss in people all around the world, and it is one of the World Health Organization's "Vision 2020" initiative's five priority priorities (WHO) [5]. Spectacles or eyeglasses are frame bearing lenses worn in front of the eyes and used to enhance vision [6]. It is the most common modality of correcting the refractive errors. Eye glasses offer many benefits over contact lenses which include little cleaning maintenance and decreased risk of eye infection. Also they need not be replaced as often as contact lenses. Nowadays it acts and enhances the wearer's personality and is no more a sign of geekiness. With variety of frames to choose from on the basis of your appearance it has emerged as a style accessory.

Until the development of polymeric or plastic materials, spectacle lenses were solely composed of glass [7]. Glass lenses are optically clear, scratch resistant and don't require any additional coating. However these materials don't have impact resistance and can cause aberration caused by the differences in refraction of the coloured rays of the spectrum. Higher specific gravity on the other hand increases the weight of the lenses. Polymeric lenses are made up of polymers that have multiple cross links which are more flexible and resistant to impact than glass. Although CR-39® is commonly used in the fabrication of spectacle lenses, newer materials with fewer crosslinks, such as polycarbonate and Trivex®, offer superior impact resistance. Polycarbonate lenses are more easily tinted than glass lenses. Unlike crown glass and CR-39® which must be treated to give UV protection they absorb all UV radiations below 380 nanometers [7].

A contact lens is a tiny lens that is placed directly on the eye's surface. Contact lenses are medical devices that can be used to correct vision, as well as for cosmetic and therapeutic purposes [3]. PMMA, RGP lenses or cellulose acetate butyrate (CAB), and soft contact lenses or HEMA are the three most prevalent lens types [3]. There are a variety of essential contact lens material qualities that might affect a patient's ocular health and wearing experience, and these traits can vary significantly depending on the material used (eg: Traditional hydrogel, silicon hydrogel) [8]. The capacity of oxygen to permeate passively through a contact lens material is described by its contact lens Oxygen permeability (Dk). On the other hand the capacity of oxygen to pass through the width of the contact lens is measured in Oxygen transmissibility (Dk/t). Silicon hydrogels have higher Dk/t values as compared to traditional hydrogel (low to moderate Dk/t values) which thus reduces corneal swelling. The modulus is a measure of material's stiffness. High water contact lenses have lower moduli which reduce the complications caused by mechanical means such as giant papillary conjunctivitis and superior epithelial actuate lesion. The Contact angle is a metric for contact lens wettability; the smaller the contact angle, the greater the wettability, and vice versa. . Contact lens comfort is reduced when the coefficient of friction is high. Deposition on contact lenses can lead to ocular discomfort, poor visual acuity and ocular illnesses like Giant Papillary Conjunctivitis. As a result, reusable contact lenses should be properly cleaned using a care method that includes a rub and rinse step [8].

Contact lenses improve visual acuity (due to greater magnification in myopia), provide a wider field of view, and reduce prismatic peripheral distortion as compared to spectacles.6 Most people these days can wear contacts successfully, even if they prefer eye glasses as their primary type of vision correction, thanks to innovations and expanding trends in contact lens usage [9]. According to recent studies, people opt to correct their vision using eyeglasses or contact lenses based on their own preferences, lifestyle, and comfort. As a result, neither contacts nor eye glasses are necessarily better than the other; each has its own set of benefits and drawbacks in terms of vision and eye health. Thus it becomes necessary to know the rising trend and choice of population from both the modalities and identify various attributes for compliance and bridge the gap of misconceptions by stating correct information and facts known.

MATERIAL AND METHODOLOGY

Study design

This would be a descriptive, analytical, cross sectional study.

Study population

It involves the general population which includes all the consenting individuals above the age of 13 and excludes population below the age limit and emmetropic.

Study period

The study would be carried out in between July 2021-September 2021.

Study setting

The survey will be conducted on a virtual platform in the desired sample size the form of a computerized self-administered questionnaire. It would be semi structured with both open and close ended questions and would sought the general information of the participant along with the cognisance and approach to the employed corrective methods. The collected data and personal information of the participants were ensured to be kept confidential. The said questionnaire for the desired sample size(which would be calculated using WHO sample size calculator) would be recorded with the help of Google Forms and circulated using the platform of social media.

Inclusion criteria

All consenting individuals above the age of 13 years

using any mode of refractive error corrective methods.

The participants will participate voluntarily in this survey. Electronic inform consent will be taken from all the eligible responders before answering the questionnaire.

After thorough reviewing of the literature available a questionnaire will be prepared. The questionnaire would intend to assess the following factors and attributes:

Patient's demographic data.

Knowledge and awareness of various modes of refractive error corrections.

Identifying the situations of preference of eye glasses and the various reasons for compliance.

Identifying the situations of preference of contact lenses and the various reasons for compliance.

Knowing about the various causes of eye discomfort experienced by people.

For the process of data collection, non-probabilistic sampling in the form of convenience method will be chosen which will be presented in the form of frequencies percentages and tabulations. The convenience sampling includes a sample drawn from an easily accessible and resource-efficient portion of the population, in this survey, the sample was composed of friends, family and a smaller portion of individuals with no relation to the researchers. Based upon the responses received, statistical computer programs will be used to assess and formulate the data.

Implications

The results of the survey would help us know the attitude and beliefs of the population to the use of eye glasses and contact lenses in terms of the satisfaction (assessed by various attributes) and compliance.

Methodology in PICOT format

P (Population): All consenting individuals above the age of 13 years using any mode of refractive error corrective methods.

I (Intervention): Assessing the compliance and satisfaction amongst the population using Eye glasses and Contact lens.

C (Comparison): Not applicable.

O (Outcome): Identifying the acceptance and behavioural intention of the population towards the different modes of correction of refractive errors.

T (Time): This survey will be conducted for a period of two months.

Measurements

To conclude the results, a questionnaire based evaluation with statistical tests and analysis will be performed.

Quantitative variables

No quantity to variables will be used in the statistics and the analysis of the study.

Statistical methods

The data collected through the Google Form responses will then be analysed (with the various statistical computer programs) and shall be depicted with the help of suitable graphical representations.

RESULTS

Considering the population size as 160 consenting individuals, using the WHO Sample size calculator at 95% confidence level and 5% permissible margins of error, the sample size comes out to be 114.

DISCUSSION

This study intends to illustrate the factors affecting people's decision making in terms of the satisfaction and compliance with the use of either spectacles or contact lenses. Awareness as referred doesn't mean that the participants had complete knowledge of the subject. Change in the situation plays an imperative role on the behavioural intention .For example, people who wear contact lenses would need to take a break after wearing it for long time. Comfort would also play a major role as a factor since many people have a misconception that contact lens will hurt their eyes in some way or that the care and application is quite inconvenient. Fashion consciousness could also play a key role and can be considered in case of both the modalities with their own reasons.

Over time, the difference in wearing time between spectacle wearers and contact lens wearers shrank until it was no longer clinically significant. Spectacle wearers wore their glasses for an average of 13 hours every day; Contact lens wearers wore their lenses for about 11.5 hours per day while the vision correction (spectacles with contact lenses) wore them for about 13.9 hours per day [10, 11]. Related studies were reviewed [12-15].

Our study's strengths includes a relatively comprehensive populated base samples from general population along with proposed reasonable rates and reliable demographic data. Secondly, by employing a combination of closed and open-ended questions, we propose to obtain the attitude and people's preference in terms of use of eye glasses and contact lenses.

Our study's limitations must also be noted. For starters, because of the small sample size of our investigation, we may not be able to discover more minor relationships between variables [11]. Furthermore, since it is a cross sectional study there is inability to establish causality between risk factors and refractive errors. The findings may have a substantial impact on public health education because, despite the fact that uncorrected refractive errors are a leading cause of vision impairment and blindness worldwide, the general public has little knowledge of the problem and its treatment options

[4]. The author proposes the necessary enlightenment of people and patients about the benefits of wearing the prescribed modalities of refractive error correction and the dangers of not using them when needed. The establishment of support groups, social platforms and inclusion of information about refractive errors in school health curriculum, would go a long way toward raising knowledge of refractive error correction and the use of treatments other than spectacles to correct refractive errors [3].

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CONFLICT OF INTEREST

Nil.

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